REMARKS

In the Official Action mailed on **03 August 2010**, the Examiner reviewed claims 1-20. Examiner rejected claims 11-19 under 35 U.S.C. § 102(b) as being anticipated by Orsic (U.S. Patent No. 4,817,082, hereinafter "Orsic"). Examiner rejected claims 1-10 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Orsic (U.S. Patent No. 4,817,082, hereinafter "Orsic"), in view of Chao et al. (U.S. Patent No. 6,449,283, hereinafter "Chao").

Rejections under 35 U.S.C. § 102

Examiner rejected claims 11-19 under 35 U.S.C. § 102 as being anticipated by Orsic, and rejected claims 1-10 and 20 under 35 U.S.C. § 103 as being obvious based on Orsic in view of Chao. Although not addressing Examiner's rejections based on the previous claim language, Applicant has amended the independent claims to clarify that the claimed embodiments include:

> a flow control mechanism in each cell that receives a flow-control signal from the receiver, wherein the receiver asserts the flow-control signal when the receiver is ready to receive communications, and wherein the flow control mechanism comprises logic for generating the acknowledgement signal by logically combining a previous acknowledge signal from the cell with the flow-control signal,

or, in the case of claim 11, that, in the claimed embodiments,

> in response to the request signal, issuing an acknowledgement signal to the transmitter which allows the transmitter to begin transmitting if the presence of a token is detected within the cell, wherein the acknowledgement signal is not issued unless the receiver has asserted an enabling signal to the cell that indicates that the receiver is ready to receive data and **a flow-control signal has been asserted by the receiver**.

These amendments find support throughout the specification of the instant application. For example, the following paragraphs describe some embodiments with the claimed features:

> In one embodiment of the present invention, the system achieves flow control by using a 1-bit channel, called *FC*, from each receiver via controller 600 to the transmitter. The channel uses *Xon/Xoff* signaling, which means that the receiver can signal that it is ready to receive data by setting *FC* to *1* (*Xon*) and the receiver can signal that it will soon be unready to receive any data by resetting *FC* to 0 (*Xoff*);[1]
>
> The second job of controller 600 is to facilitate the signaling of flow control from any receiver to its current transmitter, where flow-control information travels in the opposite direction. In particular, when controller 600 receives an *Xon* or *Xoff* signal from a receiver, controller 600 must relay that *Xon/Xoff* signal to the transmitter that is then sending data to the receiver;[2] and
>
> Because controller 600 knows which transmitter has clearance to send to the receiver, controller 600 can use this knowledge to relay the *Xon/Xoff* to the proper transmitter. Implementing the addition of the flow-control signaling to an implementation of controller 600 is straightforward. For example, controller 600 can define a new "clearance-to-send" signal for a transmitter as the logical AND of the old "clearance-to-send" signal for the transmitter and the flow-control signal of the receiver to which the transmitter wishes to send.[3]

Additionally, Applicant has added claim language previously found in claim 5 to the independent claims and cancelled claims 5, 10, and 19 without prejudice. Neither Orsic nor Chao describes the claimed embodiments.

Orsic describes a switching arrangement with a separate control ring mechanism:

> A switching arrangement comprising a crossbar array of crosspoint elements where each column of crosspoint elements, is associated with its

---

1 see instant application, par. [0056]
2 see *id.*, par. [0059]
3 see *id.*, par. [0065]

> own control ring mechanism. The enabling of the individual crosspoint elements of a column and the subsequent transmission of packets are effected rapidly in response to a token, e.g., a single enable bit, that is circulated on the associated control ring.[4]

Orsic describes using a set of *N* passed tokens to control crosspoint elements in the system:

> An arrangement in accordance with the invention is used for switching information from M input means to N output means. The arrangement includes an array of M X N crosspoint elements each associated with one of the input means and one of the output means. Each crosspoint element is responsive to a token for switching information from its associated input means to its associated output means. The arrangement further includes N control rings each associated with a different one of the output means for circulating a token among crosspoint elements associated with that output means.[5]

Although describing using the set of tokens, Orsic nowhere describes the embodiments claimed in the amended claims.

Chao describes a system for providing fast ring reservation arbitration in a switch:

> In a switch having input ports and output ports, a fast ring reservation arbitration is provided by grouping crosspoint units associated with an output port. If any of the crosspoint units of a group request the output port, a received token will be passed to crosspoint units within the group. If, on the other hand, none of the crosspoint units of a group request the output port, then a received token will bypass the group and be forwarded to a next group.[6]

In the Chao system, cells compete in a "dual round-robin" arrangement for the resolution of contention for an output:

---

4 see at least Orsic, Abstract
5 see *id.*, col. 2, lines 25-35
6 see at least Chao, Abstract

> The present invention may use a novel dual round robin (DRR) arbitration scheme in which input selection and output contention resolution are separately handled by two independent sets of round-robin arbiters. Among the virtual output queues (VOQs) maintained at each input, a cell is selected in a round-robin manner to be the request for output contention resolution. The selected cell keeps contending until winning a token, and then the next cell is selected. Compared with first-in-first-out (FIFO) input queuing, the novel dual round robin arbitration scheme reduces the destination correlation of the cell arrival sequence for output contention resolution and thus, significantly improves the delay performance of bursty traffic.[7]

Although describing the dual round-robin arbitration scheme, Chao nowhere describes the embodiments claimed in the amended claims.

In summary, although describing arbitration schemes, Orsic and Chao nowhere describe a flow control mechanism in each cell that receives a flow-control signal from the receiver, wherein the receiver asserts the flow-control signal when the receiver is ready to receive communications, and wherein the flow control mechanism comprises logic for generating the acknowledgement signal by logically combining a previous acknowledge signal from the cell with the flow-control signal. For this reason, Orsic cannot anticipate the claimed embodiments[8] and the combination of Orsic and Chao cannot render the claimed embodiments obvious.[9] Applicant therefore respectfully requests the withdrawal of the rejections of the independent claims in the instant application under 35 U.S.C. §§ 102 and 103 based on Orsic, and Orsic in view of Chao, respectively. Applicant further requests the withdrawal of the rejection of any dependent claims based on Orsic under 35 U.S.C. § 102 and based on Orsic in view of Chao under 35 U.S.C. § 103.

---

7 see *id.*, col. 12, lines 39-51
8 see Manual of Patent Examining Procedure (MPEP) § 2131
9 see MPEP §§ 21431(III) and 2143.01(IV-VI)

CONCLUSION

It is submitted that the application is presently in form for allowance. Such action is respectfully requested.

Respectfully submitted,

By _/Anthony Jones/_____
Anthony Jones
Registration No. 59,521

Date: 03 November 2010

Anthony Jones
Park, Vaughan & Fleming LLP
2820 Fifth Street
Davis, CA 95618-7759
Tel: (530) 759-1666
Fax: (530) 759-1665
Email: tony@parklegal.com